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# Comparative studies of pelviometric traits in different age groups with narrow female pelvis

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**Pelviometric studies of 36 female pelves of a narrow configuration (18 pelves with a uniformly constricted shape and 18 - with a transversely narrowed) were conducted. The change in the dimensional characteristics of these pelves was studied depending on age (age range 16-60 years). It was found that both groups of constricted pelvic forms were not characterized by high variability in the age aspect and their sizes were relatively stable throughout life. At the same time, it was found that the parameters of the transversely shaped forms of the pelves were more susceptible to changes than the dimensions of the uniformly constricted configurations.**

***Keywords:*** *Female pelvis, pelviometric signs, age morphodynamics, analysis of variance*

## INTRODUCTION

Currently, the problem of analyzing the size characteristics of narrow female pelvis remains in the focus of attention of researchers of various medical profiles. There is evidence (Kovalev, 2003) that a functionally narrow pelvis is found in every tenth parturient woman. Specialists in various fields of medicine indicate a significant increase in the risk of disability and morbidity in a child with an anatomically narrowed pelvis (Shmedyk and Trufanov, 2016; Mudrov and Chatkis, 2017; Savelieva and Sukhikh, 2018), childbirth aggravated in such cases of perinatal pathology and early neonatal mortality is noted (Rebrova, 2002; Kiselevich and Slukhina, 2012). However, despite the relevance, the age dynamics of the osteometric parameters of the female pelvis remains a poorly developed topic. Based on the analysis of literature data and having a sufficiently large osteological material, we set a goal to study the age-related morphodynamics of pelviometric signs of women in the range from 16 to 60 years.

## MATERIALS AND METHODS

The research material was the osteological collection from the museum of the department of Human Anatomy of the Azerbaijan Medical University (more than 100 preparations of mounted female pelvis preparations). The passport age of these objects, according to the museum register, ranged from 16 to 60 years and corresponded to the adolescent age period (16-21), as well as the I (22-35) and II (36-60) maturity periods. From this material were selected (using osteometric procedures) preparations that morphologically corresponded to narrow forms of the pelvis. Tazy with a transverse diameter of less than 11.8 cm. and the transverse diameter of the exit of the pelvis less than 10.5 cm. were attributed to cross-contracted forms of the pelvis, according to the recommendations used in gynecology (Chernukha and Volobuev, 2005). There were 18 such objects in the collection. In addition, the objects that had osteometric characteristics (true conjugate, diagonal conjugate, transverse diameter, ridge spacing, transverse size of the wide part, etc.) differing from the average downwards by 1.5 cm. and more were attributed to general uniformly constricted pelvic forms. The selection was carried out on the basis of a comparison of their sizes with the standards of average parameters, which are given by many authors as average values of pelviometric characteristics in women of the European race (Handa and Lockhar, 2006; Shmedyk and Trufanov, 2016; Radzinskiy and Fuks, 2019). As a result, the pelvis with a general uniform form also turned

out to be 18. Preparations classified as narrow pelvic forms were distributed by age categories evenly and thus, in both groups, 6 objects corresponded to the adolescent age period, 6 - I period of maturity, and 6 - II period maturity. On each anatomical preparation of the bone pelvis, 15 pelviometric features were measured according to the generally accepted standard procedure (Avtandilov, 1990). A list of these signs is given in the tables below. The actual data collected using osteometric procedures were processed by simple methods of variation statistics (Glantz, 1999). The necessary statistical calculations were carried out using the appropriate Microsoft Excel software package (version 2016).

## RESULTS AND DISCUSSION

As a result of osteometric studies, corresponding pelviometric characteristics were obtained, which were recorded in special pelviometric blanks. These parameters were grouped and entered into the spreadsheet environment of Microsoft Excel. Then, for the entire studied osteological sampling, the corresponding variational-statistical parameters were calculated. Using the results obtained, it was necessary to clarify the behavior of pelviometric signs in the age dynamics taking into account the configuration features of the pelvis. That is, it was necessary to determine how the osteometric parameters of the female pelvis correlate with each other in three age categories with its transversely contracted and generally uniformly constricted configuration. As we already noted in the studied collection of pelvic preparations, the configuration of which was classified as transverse-contracted forms, there were a total of 18 objects. These pelvic preparations were characterized by small transverse dimensions. When objects were distributed from this population, 6 pelvic preparations were in each of the age groups under consideration. For transversely shaped pelvic forms, there was a large variation in metric indices. The most varying features were such signs as anatomical and true conjugates, the straight and transverse size of the wide part of the pelvis, as well as oblique diameter, the transverse size of the narrow part of the pelvis, the intercrest distance and the height of the pelvis. At the same time, the last four signs in different age periods differ by more than 1 cm, and the difference in the size of the pelvis height between the age groups of the first and second mature periods is more than 4 cm. Also, a sharp increase in parameters in the second mature period was characteristic of the transverse size of the narrow part pelvis and intercrest distance. However, all other metric indicators with this form of the pelvis change little with age. The transverse size of the inferior aperture of lesser pelvis, diagonal conjugate, the straight size of narrow part of pelvis and transverse diameter had the most stable dimensional characteristics.

The greatest interval of variability in all three age categories was observed in such signs as the straight size of the narrow part of the pelvis, the distance of the symphosacralis, the true conjugate, the longitudinal size of the inferior aperture of lesser pelvis and the intercrest distance. The maximum range of numerical indicators (taking into account the average value of the parameter in the sample) was noted at the intercrest distance ($27.3>X>22.9$; $28.5>X>21.9$ and $30.0>X>23.3$, respectively, to the increase in age rank). In addition, high variability was observed in both mature periods in the longitudinal size of the inferior aperture of lesser pelvis ($11.8>X>8.3$ and $11.5>X>8.1$) and in the straight size of the narrow part of the pelvis ($12.3>X>8.3$ and $12.2>X>9.0$).

Thus, there are no sufficient grounds for confident statements about the variability over time of pelviometric signs in case of transverse-constricted forms of the pelvis. Perhaps the most interesting is a sharp increase in the parameters of the height of the pelvis, intercrest distance and the transverse size of the narrow part of the pelvis in the last age category (36-60 years). However, all these characteristics can be considered in some way relative due to the small number of objects studied. Therefore, for a more weighty argument of the statements made, the analysis of variance was carried out.

In this case, the differences were checked at a 5% significance level ($P<0.05$). The corresponding critical value F from the Snedekor and Gokhran tables [11] in this case was equal to 3.24. Statistical indicators of the investigated signs and the results of the F-test are presented below in table 1. The results of analysis of variance revealed differences between age categories and in this case, according to four signs - pelvis height, anatomical

conjugate, straight size of the wide part of the pelvis and oblique diameter. At the 7% level of significance, differences between age groups are also found in the transverse size of the narrow part of the pelvis. At the same time, even a slight increase in sensitivity to differences (P <0.02) leads to the loss from the cohort of signs differentiating the selected age periods, such parameters as oblique diameter and straight size of the wide part of the pelvis.

Minor discrepancies are characteristic of two signs characterizing the dimensions of the sagittal direction and one vertical parameter. Thus, it can be said that with a general transverse narrowness of the pelvic configuration, morphodynamic changes in latitudinal parameters are extremely insignificant. Differences are observed only in longitudinal and high-altitude pelviometric traits, and even in one parameter (oblique diameter), which has an intermediate position between the main anatomical axes of the horizontal plane.

Based on the results of analysis of variance, we can conclude that transverse-constricted pelvic configurations are generally conservative. Interestingly, along with the wide parameters, the longitudinal parameters also change little with increasing age. Almost indifferent in this context are the interspinous distance, the transverse and longitudinal dimensions of the inferior aperture of lesser pelvic cavity, the straight size of the narrow part of the pelvis and the transverse diameter. Thus, it is thought that the factors that caused the transverse narrowness of the pelvis continue to act until old age.

**Table 1.** Pelviometric characteristics in various age groups and analysis of variance according to the same characteristics in various age groups with a cross-shaped pelvis.

| Stastistical parameter | | Anatomic conjugata | Transverse diameter | Conjugata vera(true) | Conjugata diagonalis | Diameter obliqua | Direct size of the wide part of the pelvis | Tramsverse size of the wide part of the pelvis | Tramsverse size of the narrow part of the p pelvis | Direct size of the narrow Part of the pelvis | Transverse diameter of the lesser pelvic outlet | Longitudinal size of the lesser pelvic outlet | Distantia symphosacralis | Distantia spinarum | Distantia cristarum | Height of the pelvis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16-21 | X | 10.58 | 10.28 | 11.50 | 11.6 | 11.68 | 11.1 | 11.48 | 9.88 | 10.55 | 9.55 | 9.50 | 10.93 | 10.90 | 25.4 | 19.6 |
| 22-35 | X | 10.72 | 10.27 | 10.82 | 11.3 | 12.73 | 12.1 | 12.30 | 10.2 | 10.30 | 9.47 | 10.18 | 10.57 | 10.78 | 25.5 | 19.5 |
| 36-60 | X | 9.97 | 10.73 | 11.82 | 11.6 | 12.78 | 11.4 | 11.68 | 11.2 | 10.28 | 9.83 | 9.62 | 10.05 | 10.32 | 28.1 | 23.6 |
| 16-21 | S | 0.40 | 0.50 | 1.07 | 0.94 | 0.97 | 0.53 | 0.61 | 0.56 | 0.70 | 0.83 | 0.94 | 1.36 | 1.17 | 1.79 | 1.40 |
| 22-35 | S | 0.51 | 1.04 | 1.01 | 0.67 | 0.56 | 0.67 | 0.84 | 0.89 | 1.64 | 0.84 | 1.50 | 0.81 | 0.81 | 2.58 | 1.85 |
| 36-60 | S | 0.16 | 1.12 | 0.71 | 0.53 | 0.36 | 0.47 | 0.53 | 1.16 | 1.24 | 0.61 | 1.19 | 0.92 | 1.01 | 2.55 | 1.79 |
| 16-21 | S(r) | 0.16 | 0.20 | 0.44 | 0.38 | 0.40 | 0.22 | 0.25 | 0.23 | 0.28 | 0.34 | 0.38 | 0.56 | 0.48 | 0.73 | 0.57 |
| 22-35 | S(r) | 0.21 | 0.43 | 0.41 | 0.27 | 0.23 | 0.27 | 0.34 | 0.36 | 0.67 | 0.34 | 0.61 | 0.33 | 0.33 | 1.05 | 0.76 |
| 36-60 | S(r) | 0.07 | 0.46 | 0.29 | 0.22 | 0.15 | 0.19 | 0.22 | 0.48 | 0.51 | 0.25 | 0.49 | 0.38 | 0.41 | 1.04 | 0.73 |
| 16-21 | min | 10.2 | 9.6 | 9.6 | 9.9 | 10.2 | 10.3 | 10.6 | 9.1 | 9.6 | 8.2 | 8.4 | 9.3 | 9.5 | 22.9 | 18.0 |
| 22-35 | min | 10.2 | 9.4 | 9.6 | 10.3 | 11.8 | 11.5 | 10.9 | 9.4 | 8.3 | 8.3 | 8.3 | 9.7 | 9.6 | 21.9 | 17.5 |
| 36-60 | min | 9.8 | 9.4 | 10.6 | 10.6 | 12.3 | 11.0 | 11.2 | 9.1 | 9.0 | 9.0 | 8.1 | 9.4 | 9.0 | 23.3 | 21.0 |
| 16-21 | max | 11.3 | 10.9 | 12.5 | 12.3 | 12.6 | 11.7 | 12.1 | 10.5 | 11.4 | 10.6 | 11.0 | 12.5 | 12.1 | 27.3 | 21.6 |
| 22-35 | max | 11.5 | 12.1 | 12.2 | 12.2 | 13.3 | 13.3 | 13.3 | 11.3 | 12.3 | 10.4 | 11.8 | 11.8 | 11.9 | 28.5 | 21.7 |
| 36-60 | max | 10.2 | 12.0 | 12.6 | 12.1 | 13.2 | 12.3 | 12.6 | 12.5 | 12.2 | 10.6 | 11.5 | 11.7 | 11.7 | 30.0 | 26.5 |
| D(inter) | | 0.961 | 0.421 | 1.567 | 0.194 | 2.315 | 1.58 | 1.087 | 2.652 | 0.134 | 0.222 | 0.802 | 1.182 | 0.572 | 13.8 | 32.5 |
| D(inside) | | 0.149 | 0.866 | 0.894 | 0.537 | 0.461 | 0.315 | 0.456 | 0.821 | 1.574 | 0.588 | 1.517 | 1.12 | 1.01 | 5.447 | 2.9 |
| F | | 6.461 | 0.485 | 1.752 | 0.361 | 5.025 | 5.016 | 2.385 | 3.229 | 0.085 | 0.377 | 0.528 | 1.055 | 0.566 | 2.534 | 11.3 |
| P | | <0.01 | <0.63 | <0.21 | <0.7 | <0.02 | <0.02 | <0.13 | <0.07 | <0.92 | <0.69 | <0.60 | <0.37 | <0.58 | <0.11 | <0.01 |

**Note (hereinafter):** 16-21, 22-35, 36-60 - age groups; N is the number of pelvic preparations; X is the average value of the trait; S is the standard deviation; S (r) is the error of the standard deviation; D (inter) - the value of intergroup dispersion; D (inside) is the value of intragroup dispersion; F - the calculated value of the Fisher criterion; P - probability of validity of the null hypothesis.

And perhaps for this reason, morphodynamic changes are observed only in signs of non-transverse direction. Among the investigated osteological objects, as mentioned above, a group of pelvises were also impressed out, which, by their configuration, were classified as general uniformly constricted forms. There were 18 such preparations of the pelvis in the studied collection, moreover, in each age group, as in the previous case, 6 objects also presented.

Pelviometric signs in the group of general uniformly constricted forms have shown themselves to be the most variable indicators. The average size of more than half of the signs (anatomical and diagonal conjugates, transverse and oblique diameter, straight and transverse size of the wide part of the pelvis, as well as the distance of the symphosacralis and the straight size of the narrow part of the pelvis) in different age periods differ greatly from each other, and the difference between their values It is more than 1 cm. Two more signs - the height of the pelvis and interspinous distance – also differ significantly in terms of parameters almost as high as a centimeter (the difference is 0.98 cm in average and 0.99 cm respectively).

The transverse size of inferior aperture of lesser pelvic cavity (Xavg=8.85, Xavg=9.53 and Xavg=9.57, respectively, increasing age) and the intercrest distance (Xavg=25.25, Xavg=25.67 and Xavg=24.98), for which the difference in averages was approximately 0.7 cm.

These data suggest that having the most minimal values of pelviometric signs, general uniformly constricted pelvic forms have the greatest variability.

**Table 2.** Pelviometric characteristics in various age groups and analysis of variance on the same lines in various age groups with a uniformly reduced form of the pelvis

| **Stastistical parameter** | | **Anatomic conjugata** | **Transverse diameter** | **Conjugata vera(true)** | **Conjugata diagonalis** | **Diameter obliqua** | **Direct size of the wide part of the pelvis** | **Tramsverse size of the wide part of the pelvis** | **Tramsverse size of the narrow part of the p pelvis** | **Direct size of the narrow Part of the pelvis** | **Transverse diameter of the lesser pelvic outlet** | **Longitudinal size of the lesser pelvic outlet** | **Distantia symphosacralis** | **Distantia spinarum** | **Distantia cristarum** | **Height of the pelvis** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 16-21 | X | 8.85 | 11.52 | 8.87 | 8.63 | 10.10 | 8.70 | 8.57 | 8.52 | 9.80 | 8.85 | 8.50 | 10.9 | 9.90 | 25.3 | 22.25 |
| 22-35 | X | 9.75 | 11.55 | 9.67 | 10.6 | 11.90 | 9.07 | 9.88 | 9.13 | 8.77 | 9.53 | 9.22 | 10.7 | 9.92 | 25.7 | 21.88 |
| 36-60 | X | 9.60 | 10.23 | 8.97 | 9.68 | 10.93 | 9.77 | 10.12 | 8.60 | 9.40 | 9.57 | 9.43 | 9.75 | 8.93 | 25.0 | 21.27 |
| 16-21 | S | 0.67 | 0.87 | 1.09 | 1.14 | 1.54 | 0.74 | 1.10 | 0.71 | 1.12 | 1.22 | 0.60 | 1.27 | 0.98 | 1.90 | 2.70 |
| 22-35 | S | 1.47 | 0.55 | 1.03 | 2.12 | 1.84 | 1.50 | 1.97 | 1.79 | 1.76 | 1.06 | 0.84 | 1.30 | 1.92 | 2.20 | 2.75 |
| 36-60 | S | 1.44 | 0.48 | 1.36 | 1.95 | 1.79 | 1.65 | 2.00 | 1.26 | 1.54 | 1.10 | 1.32 | 1.78 | 0.87 | 2.75 | 3.10 |
| 16-21 | S(r) | 0.27 | 0.36 | 0.45 | 0.46 | 0.63 | 0.30 | 0.45 | 0.29 | 0.46 | 0.50 | 0.24 | 0.52 | 0.40 | 0.77 | 1.10 |
| 22-35 | S(r) | 0.60 | 0.22 | 0.42 | 0.87 | 0.75 | 0.61 | 0.80 | 0.73 | 0.72 | 0.43 | 0.34 | 0.53 | 0.78 | 0.90 | 1.12 |
| 36-60 | S(r) | 0.59 | 0.20 | 0.56 | 0.79 | 0.73 | 0.67 | 0.81 | 0.52 | 0.63 | 0.45 | 0.54 | 0.73 | 0.35 | 1.12 | 1.27 |
| 16-21 | min | 7.9 | 10.3 | 7.3 | 7.5 | 7.8 | 7.4 | 7.5 | 7.1 | 7.9 | 7.3 | 7.8 | 8.7 | 8.2 | 22.6 | 18.5 |
| 22-35 | min | 7.4 | 10.7 | 8.3 | 7.7 | 8.3 | 7.6 | 7.9 | 6.8 | 7.1 | 8.0 | 7.9 | 8.5 | 7.2 | 21.8 | 17.7 |
| 36-60 | min | 7.4 | 9.9 | 7.6 | 7.8 | 8.7 | 7.8 | 7.4 | 6.9 | 7.3 | 8.1 | 7.7 | 7.5 | 7.4 | 22.0 | 16.9 |
| 16-21 | max | 9.6 | 12.2 | 10.5 | 9.8 | 11.9 | 9.4 | 9.7 | 9.0 | 10.9 | 10.6 | 9.2 | 12.2 | 11.0 | 27.5 | 25.5 |
| 22-35 | max | 11.3 | 12.3 | 11.0 | 12.6 | 13.1 | 11.9 | 12.5 | 11.0 | 10.6 | 10.6 | 10.1 | 12.5 | 12.0 | 27.1 | 26.2 |
| 36-60 | max | 11.2 | 11.2 | 10.9 | 11.9 | 13.1 | 11.5 | 12.4 | 10.5 | 10.7 | 10.4 | 10.8 | 12.4 | 9.8 | 29.5 | 25.9 |
| D(inter) | | 1.395 | 3.382 | 1.14 | 5.621 | 4.869 | 1.762 | 4.191 | 0.672 | 1.629 | 0.982 | 1.432 | 2.149 | 1.902 | 0.712 | 1.48 |
| D(inside) | | 1.553 | 0.43 | 1.372 | 3.198 | 2.989 | 1.839 | 3.019 | 1.769 | 2.246 | 1.277 | 0.935 | 2.156 | 1.792 | 5.332 | 8.16 |
| F | | 0.898 | 7.856 | 0.831 | 1.757 | 1.629 | 0.958 | 1.388 | 0.38 | 0.725 | 0.768 | 1.532 | 0.997 | 1.061 | 1.061 | 0.18 |
| P | | <0.43 | <0.01 | <0.46 | <0.21 | <0.23 | <0.41 | <0.28 | <0.69 | <0.50 | <0.48 | <0.25 | <0.39 | <0.37 | <0.37 | <0.84 |

Note that with this configuration, only the parameters of the transverse diameter and height of the pelvis in the first two age categories, as well as the transverse size of the inferior aperture of lesser pelvic cavity and the distance of the symphosacralis in the first period of mature age did not have minimum values compared to other forms of the pelvis. In all other cases, among the entire sample (the osteological collection studied), the smallest indices of pelviometric signs were observed just with the given configurations of the pelvis. The maximum variability of parameters in this group was found in the following pelviometric signs: anatomical conjugate, diagonal conjugate, oblique diameter, and also the transverse dimensions of the wide and narrow part of the pelvis. For these signs, the difference between the minimum and maximum rates was generally above 40% of their average value. It is noteworthy that such an imbalance was more noticeably observed more often in periods of mature age.

For example, significant variability occurred in both mature periods at diagonal conjugates (12.6>X>7.7 and 11.9>X>7.8, respectively, in period I and II), at the transverse size of a wide part of the pelvis (12.5>X>7.9 and 12.4>X>7.4) and at the transverse size of the narrow part of the pelvis (11.0>X>6.8 and 10.5>X>6.9). Interestingly, the greatest variation of parameters (>50% of the average value for a trait) was noted at the distance of the symphosacralis in the second period of mature age - 12.4>X>7.5. However, in previous age categories, the variability of the parameters of this trait is very moderate. In general, in the adolescent age group, for most signs, there was a low variability of dimensional characteristics, which often amounted to less than 25% of the corresponding average value. Only the true conjugate (10.5>X>7.3), oblique diameter (11.9>X>7.8) and the transverse size of inferior aperture of lesser pelvic cavity (10.6>X>7.3) had a rather high variability in this age category. Statistical indicators of the metric characteristics of the pelvis in case of general uniformly constricted forms suggest the presence of certain differences in its size in certain age periods (the variability of signs changes quite synchronously with increasing age). But even here, the comparatively small number of the studied preparations does not allow for the imposition of unconditional judgments. To confirm or refute our assumptions, it was decided to again resort to the use of analysis of variance. The conditions for accepting the null hypothesis and the critical value of F remained unchanged and, using proper calculations, data were obtained from comparative statistical analysis. The values of mean values of pelviometric signs and other variation-statistical parameters, as well as the results of analysis of variance, are presented below in Table 2.

Conducted analysis of variance almost completely confirmed our assumptions about low variability over the age of the size of the pelvis in the group of general uniformly contracted forms. Surprisingly, only the parameters of a single pelviometric trait (transverse diameter) have statistically significant differences when the corresponding sample is broken down into age categories. The remaining parameters, judging by the results of the F-test, have relatively stable parameters from adolescence to old age. Of these parameters, only a diagonal conjugate with a decrease in sensitivity to differences up to 21% of the significance level (P<0.207) reveals minor signs of a trait that has differentiated dimensions at different age periods. The diagonal conjugate, as well as the transverse diameter, are the total parameters of the pelvis (as if its dimensions) and correlate little with local dimensions, which in turn are closely related to the development and functions of the internal organs. These signs are subject to sufficiently strong individual variations and are significantly dependent on environmental factors and adaptation. That is, to summarize, it can be said that the general uniformly constricted forms of the pelvis have a greater conservatism of parameters at different age periods compared to its cross-contracted variants.

## CONCLUSIONS

The results obtained in the course of this study (parameters of the studied traits, their variability, etc.) are generally comparable with the results obtained by other authors (Khrebtova and Khodova, 2004; Syrova, 2008; Vinogradov, 2012). Nevertheless, there were differences in some mean values of pelviometric characters when compared with the data of some authors (Kurinov, 2007; Gaivoronsky and Bessonov, 2012). Howe-

ver, the revealed differences in the statistical characteristics can be fully explained by the racial-population characteristics of the material studied. Thus, the interpretation of the obtained conclusions with the help of our own analytical constructions can be considered quite legitimate. Summarizing the results of the study of the age-related morphodynamics of the female pelvis in some narrow forms of its configuration, we can say that the design of the pelvis influences, to a certain extent, the variability of pelviometric features in the context of age. Both groups of constricted pelvic forms are not characterized by high variability, and in general-uniformly narrowed forms, almost all pelviometric parameters have the greatest stability by age. It is striking that within the age categories, with this form of the pelvis, the variability of a significant number of pelviometric signs is quite high. Thus, a preliminary analysis of the results allows us to accurately state that the narrow forms of the pelvis of women, in general, are more constant throughout life, although they have a greater range of variability in a considerable number of their metric characteristics.

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## Müxtəlif yaş dövrlərində qadın çanağının dar formalarının pelviometrik əlamətlərinin müqayisəli tədqiqi

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Dar formalı 36 qadın çanağı üzərində pelviometrik tədqiqatlar aparılmışdır (18 ümumi-bərabər daralmış formalı, 18 köndələn-daralmış çanaq). Bu çanaqların ölçü xüsusiyyətlərinin dəyişikliyi yaşla əlaqədar (yaş həddi 16-60) öyrənilmişdir. Müəyyən olunmuşdur ki, dar çanağın hər iki forması yaş aspektində yüksək dəyişkənlik ilə xarakterizə olunmur və onların ölçüləri həyat boyu nisbətən sabitdir. Eyni zamanda, köndələn daralmış formalı çanaqların göstəriciləri ümumibərabər daralmış formalı çanaqların göstəricilərinə nisbətən dəyişikliklərə daha çox həssas olduğu müəyyən edilmişdir.

***Açar sözlər:*** *Qadın çanağı, pelviometrik əlamətlər, morfometrik analiz, dispersyion analiz*

## Сравнительные исследования пельвиометрических признаков в различных возрастных группах при узких формах женского таза

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Проведены пельвиометрические исследования 36 женских тазов узкой конфигурации (18 тазов с общеравномерносуженной формой и 18 – с поперечносуженной). Изучалось изменение размерных характеристик этих тазов с связи с возрастом (возрастной интервал 16-60 лет). Обнаружено, что обе группы суженных форм тазов не характеризуются высокой изменчивостью в возрастном аспекте и их размеры в течении жизни относительно стабильны. Вместе с тем, установлено, что параметры поперечносуженных форм тазов более подвержены изменениям, нежели размеры общеравномерносуженных конфигураций.

***Ключевые слова:*** *Женский таз, пельвиометрические признаки, возрастная морфодинамика, дисперсионный анализ*